

Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

1. (Currently Amended) A plug-in furnace & and kiln-oriented video camera, comprising:

a body of a video camera, a video recorder (23) and a digital thermometer (25);

wherein the body of a video camera ~~comprising~~ comprises a video camera (19), a pick-up gun (16), a pipe-typed cooler (9), a sealing device (15), a sight hole (21), a blow-down ring (22), and a temperature measurement element (20);

wherein the video camera (19) is installed at a front end of pick-up gun (16), inserted into the furnace through the pipe-typed cooler (9) installed at the flange short pipe (4) of a furnace shell;

wherein the temperature measurement element is located near the top of video camera (19) in pick-up (16);

a ring gap 28 of ~~blow-down~~ video camera (19) is formed between blow-down ring (22) and video camera (19);

a double sealing structure of valve (13) and sealing sheath (15) ~~is used~~;

wherein video camera (19) ~~uses~~ comprises a lens of wide angle, with an angle of view at in the range of 90-120°;

a double gas protection for blow-down wind through the ring gap via an inner wind from sight hole (21) and an outside blow-down from sight hole (21) ~~is employed~~;

a video recorder (23), monitor (24) and digital thermometer (25) are placed outside the furnace shell, connected ~~respectively~~ through a cable line to the video camera (19) and the temperature measurement element (20).

2. (Currently Amended) The plug-in furnace & and kiln-oriented video camera ~~as claimed in of claim 1~~, wherein the ~~said industrial~~ furnace & and kiln is comprises a blast furnace of iron-smelting (1);

wherein the ~~said~~ video camera (19) is a micro video camera;

wherein the said pipe-typed cooler (9) has a diameter ranging up to 60-200 mm and a length ranging up to 200-3000 mm;

wherein the said sight-hole (21) has an aperture up to $\Phi 3$ - $\Phi 15$ mm; and

wherein the width of the gap of the said blow-down gap (28) is 0.2-3.0 mm.

3. (Currently Amended) The plug-in furnace & and kiln-oriented video camera ~~as claimed in~~ of claim 2, wherein the said micro video camera uses the CCD with a wide range of light sensing.

4. (Currently Amended) An image processing system, comprising the following devices:

A a body of a video camera, ~~using the body of video camera mentioned in claim 2 and claim 3 of the invention it,~~ which receives the infrared light emitted from a furnace charge and ~~it~~ the light is transformed into the an infrared image of the a burden and the an adjacent equipment in the a furnace, when the furnace operates without visible light;

A a computer, for making an image process for the image, and ~~getting~~ obtaining the quantitative data of gas distribution and temperature distribution of the burden; and

A a color monitor, in accordance with ~~the~~ a relative relation between the strength of infrared light and the temperature of ~~the~~ a measured object, to transform the gray values of various points in the image into temperature value, and to be displayed in the distribution status of temperature or gas for the burden in the forms of a STN color diagram, a numerical diagram and a curve diagram.

5. (New) The image processing system camera of claim 4, wherein the video camera (19) is a micro video camera; wherein the video camera comprises:
a pipe-typed cooler (9) having a diameter ranging up to 60-200 mm and a length ranging up to 200-3000 mm;
a sight-hole (21) having an aperture up to $\Phi 3$ - $\Phi 15$ mm;
a blow-down ring (22), wherein a ring gap (28) is formed between blow-down ring (22) and video camera (19); and

wherein the width of the gap of the blow-down gap (28) is 0.2-3.0 mm.

6. (New) The image processing system of claim 1, wherein the micro video camera uses CCD with a wide range of light sensing.